# Shape-Controlled Synthesis of Nanomaterials

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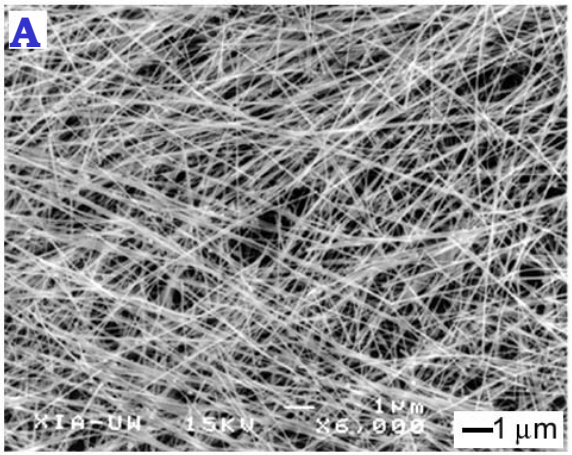
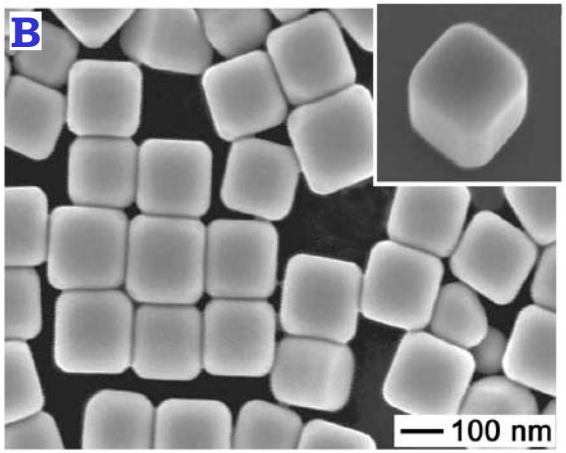
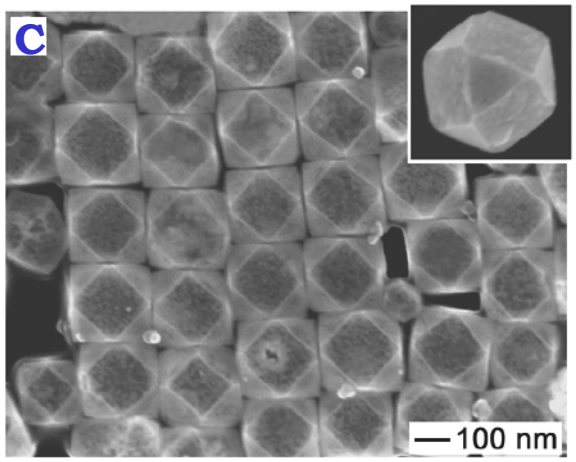
**We have demonstrated the use of poly(vinyl pyrrolidone) (or PVP) as a capping to control the shapes of nanostructures synthesized using the polyol process. For example, by controlling the molar ratio between $AgNO_3$ and PVP, we could generate silver nanowires and nanocubes as monodispersed samples. The ability to control the shape of metal nanostructures is critical to many applications that include optoelectronics, electronics, catalysis, and sensing. (for example, *Science* 2002, *298*, 2176; *Nano Lett.* 2003, *3*, 955.)**



# Other Accomplishments

- **Supervision of five undergraduate students enrolled for the independent study (with a total of 15 credits). Two of them co-authored two publications published in *Chem. Mater.* and *J. Am. Chem. Soc.* (both in 2003).**
- **Supervision of a junior student from the Woodinville High School in the summers of 2002 and 2003, and this student co-authored two papers published in *Adv. Func. Mater.* and *J. Am. Chem. Soc.*. He is a freshman at Princeton now.**
- **Supervision of a junior student from the Mercer Island High School in the summer of 2003, and he will come back again.**
- **Serving as the guest editor for a special issue on nanowires that was published in *Adv. Mater.* (2003).**
- **Serving as a guest lecturer for the summer school organized by the NSF-supported Science and Technology Center.**
- **Serving as co-organizers of symposia for MRS, APS and SPIE.**